

REMARKS

Claims 1-26 are pending in the application. Claims 1, 9, 17, 25 and 26 are rejected under 35 U.S.C. § 103(a) as being deemed unpatentable over U.S. Publication No. 2002/0166116 (Eidt) in view of U.S. Patent No. 5,537,588 (Engelmann et al.). Claims 2-3, 6-8, 10-11, 14-16, 18-19 and 22-24 are rejected under 35 U.S.C. § 103(a) as being deemed unpatentable over U.S. Publication No. 2002/0166116 (Eidt) in view of U.S. Patent No. 5,537,588 (Engelmann et al.) as applied to Claims 1, 9, 17, 25 and 26 above and, and further in view of U.S. Patent No. 5,485,613 (Engelstad et al.). Claims 4-5, 12-13 and 20-21 are rejected under 35 U.S.C. § 103(a) as being deemed unpatentable over U.S. Publication No. 2002/0166116 (Eidt) in view of U.S. Patent No. 5,537,588 (Engelmann et al.), and further in view of U.S. Patent No. 5,485,613 (Engelstad et al.), as applied to claims 1-3, 6-11, 14-19 and 22-26 above, and further in view of U.S. Patent No. 6,047,295 (Endicott et al.). Of the Claims 1, 9, 17, 25 and 26 are independent. The application, as argued herein, is believed to overcome the rejections.

In garbage collection, registers are stored on a stack and are used to estimate live data in main memory (especially in memory program blocks known in the industry as the heap). Some of the stack registers hold pointers (references) to objects stored in main memory (the heap), while other stack registers hold values used by routines or subroutines processed in main memory. When the space in main memory used by objects, routines or subroutines is no longer required, then garbage collection recovers the memory space such that a memory manager of the run time environment may reclaim that memory space. See Eidt, page 1, paragraphs [0004] through [0005]. Eidt addresses the stack and not the heap.

Specifically Eidt provides a method for distinguishing reference registers from non-reference registers stored on the stack. Eidt partitions the registers into volatile and non-volatile groups and then further partitions each of these groups into reference value holding registers and non-reference value holding registers (i.e., reference and non-reference types). By providing an indication of which values are reference values, the garbage collector can check references to objects in memory and determine whether the reference is alive or if the object is garbage. See page 5, paragraph [0062].

The present invention as claimed is directed to the heap and not the stack. The argued claim language recites "an object allocation routine which stores an object of a particular type in one of a plurality of logical partitions in the heap dependent on a predefined category assigned to the object type..."

As to the claim term "...plurality of logical partitions in the heap...", the Advisory Action and final Office Action cite passages of Eidt which are directed to partitioning of the volatile register set into reference and non-reference registers. These registers are not on the heap and thus Eidt does not disclose partitioning of the heap. *New Rejection*

As to the claim term "...dependent on a predefined category assigned to the object type...", the Advisory Action and final Office Action argue that "category" reads on "reference and non-reference type". Where the claim term "...dependent on a predefined category..." grammatically is a modifier of the term "...stores an object of a particular type..." (i.e., "stores an object of a particular type...dependent on a predefined category assigned to the object type..."), the term "category" is to be interpreted in context of the claimed stored object and its object type. Restated, it is the object type that has a predefined category in the presented claim. The passages of Eidt cited by the final Office Action and Advisory Action do not support the argument that objects of Eidt are categorized into reference and non-reference types. It is the registers of Eidt that are classified/categorized as reference and non-reference types. See page 3, column 1 and page 3, paragraphs [0041] through [0042] and the Abstract. As stated above, registers are distinct from objects in Eidt.

Base Claims 1, 9, 17, 25 and 26 have now been amended to emphasize the foregoing patentable distinctions. In particular, added claim language "...such that each object of a certain category is stored in one logical partition of the heap and objects of a category different from the certain category are stored in a logical partition different from the one logical partition;..." makes clear that the present invention is directed to collection of objects stored in partitions of the heap (main memory) based on a category assigned to an object type, and not by register type or reference value stored in the stack register as in Eidt. *indicate different type being stored under predefined category*

Further, as now claimed, the present invention "...searches one of the logical partitions of the heap...and reclaims non-referenced objects stored in the searched logical partition of the heap." In contrast, Eidt does not search the heap (main memory). Instead Eidt searches one of

the logical partitions of the stack registers, namely the registers indicated to have reference values (reference type registers). See page 5, paragraph [0062]. Further, Eidt reclaims objects stored in main memory not objects stored in the searched partition (which would be Eidt's stack registers) in contrast to the claimed invention. *new registration*

None of the other cited references provide the claimed subject matter lacking in Eidt. Further, none of the cited references imply or suggest that garbage collection techniques directed to the stack and/or stack registers (such as in Eidt) may be applied directly to objects in the heap. The claimed invention is directed to the heap and objects therein. Therefore, no combination of the cited art implies, suggests or makes obvious the claimed invention. The rejections under § 103 are thus believed to be overcome. Acceptance is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (Claims 1-26) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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